TOSHIBA

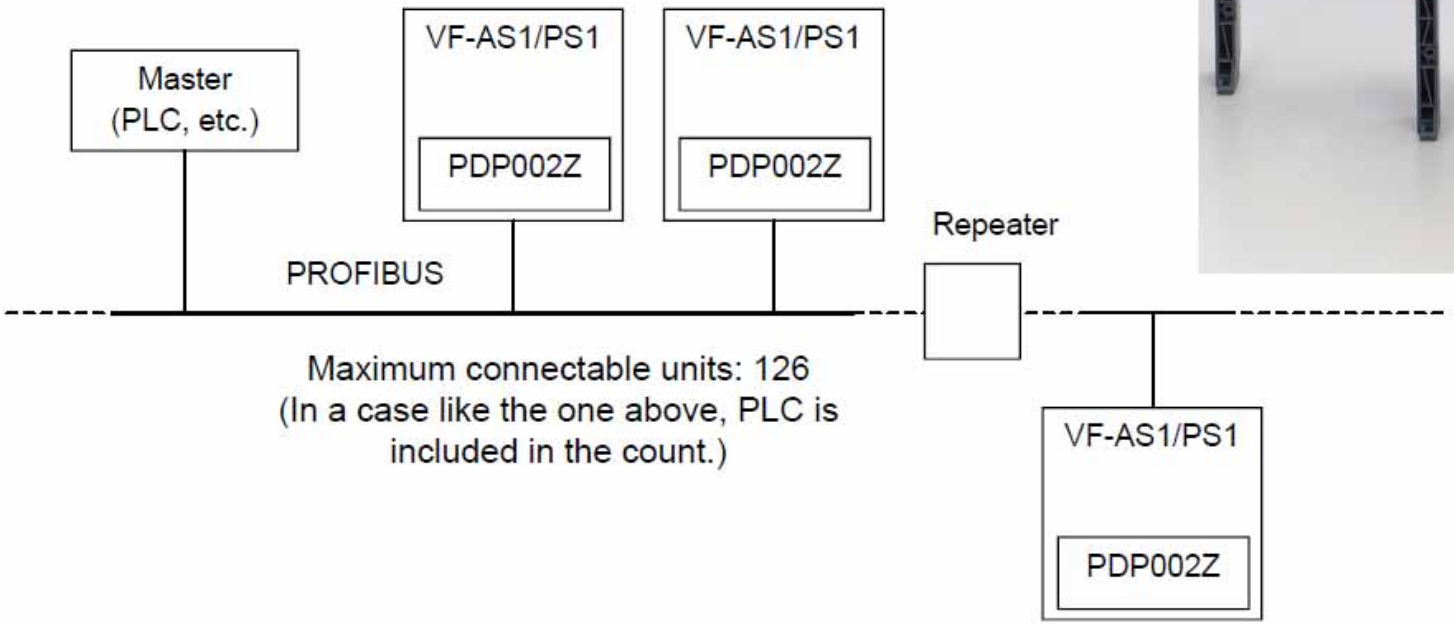
VF-AS1/PS1

PDP002Z (PROFIBUS DP)

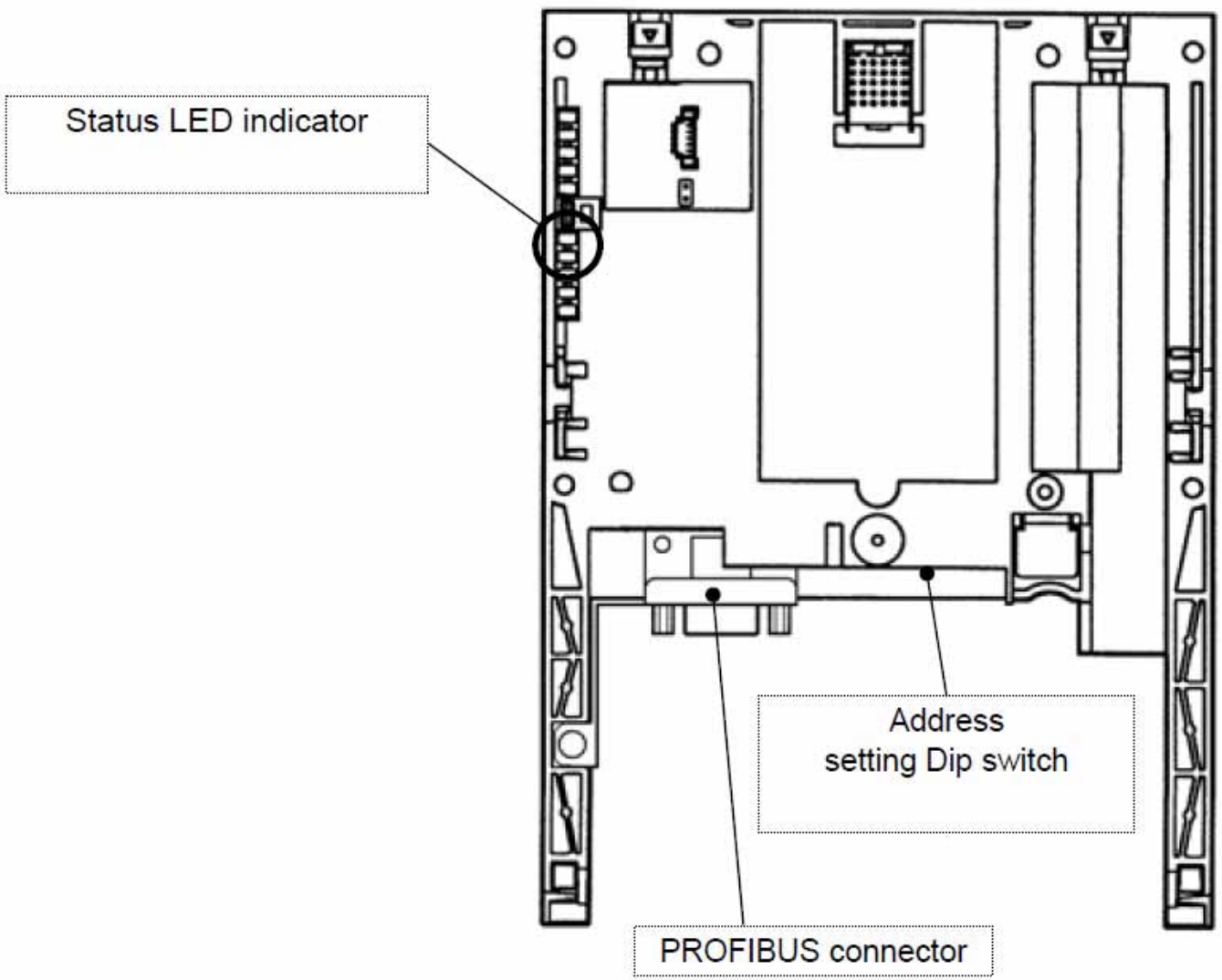
Feb.2008

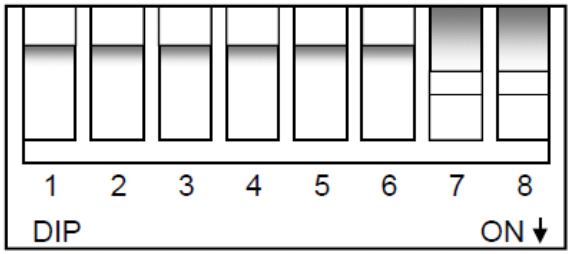
Overview

This option allows the VF-AS1/PS1 inverter to be communicated with the cyclic command transmission and monitoring of the original profile ("USER DEFIND") of our company other than application profile "Profile for Variable Speed Drives PROFIdrive (3.072)" which PROFIBUS define

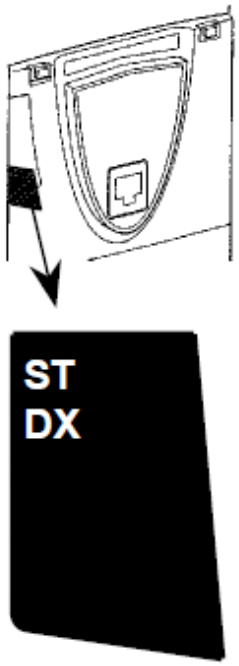


Exterior features





Status indicator



The PDP002Z has two LEDs, ST (status) and DX (data exchange) to indicate the statuses of PROFIBUS-DP and the PDP002Z itself.

ST (Status): Red LED

LED	Meanings
Off	No diagnostics present
Flashes	Waiting for parameterisation or configuration
Lights	DP status error * For example, a station address is not setcorrectly.

DX (Data exchange): Green LED.
Indicates the status of the PROFIBUS network.
It lights when the PDP002Z is on-line and data exchange is possible.

Inverter Parameter Settings

Parameter	Function	Adjustment range	Default setting
F830*	Communication option setting 1 (PPO TYPE)	0: None 1: PPO TYPE 1 2: PPO TYPE 2 3: PPO TYPE 3 4: PPO TYPE 4	0
F831 - F846	Communication option setting 2 - 13	Refer to section 4.	0
F851	Inverter operation at the communications loss action (Network wire breaks)	0: Stop and break of connection 1: None 2: Deceleration stop 3: Coast stop 4: Emergency stop 5: Preset speed operation command (Operating at the preset speed operation frequency set with F852)	0
F852	Preset speed operation selection	0: None 1 to 15: Preset speed	0
F853	Monitoring of communication device station address	Displays the station address assigned with the DIP switch. 0 to 125	2
F854**	Monitoring of communications device's baud rate	Displays the network communication speed set with the DIP switch. 0: 12 Mbit/s 1: 6 Mbit/s 2: 3 Mbit/s 3: 1.5 Mbit/s 4: 500 kbit/s 5: 187.5 kbit/s 6: 93.75 kbit/s 7: 45.45 kbit/s 8: 19.2 kbit/s 9: 9.6 kbit/s 255: Disabled	0

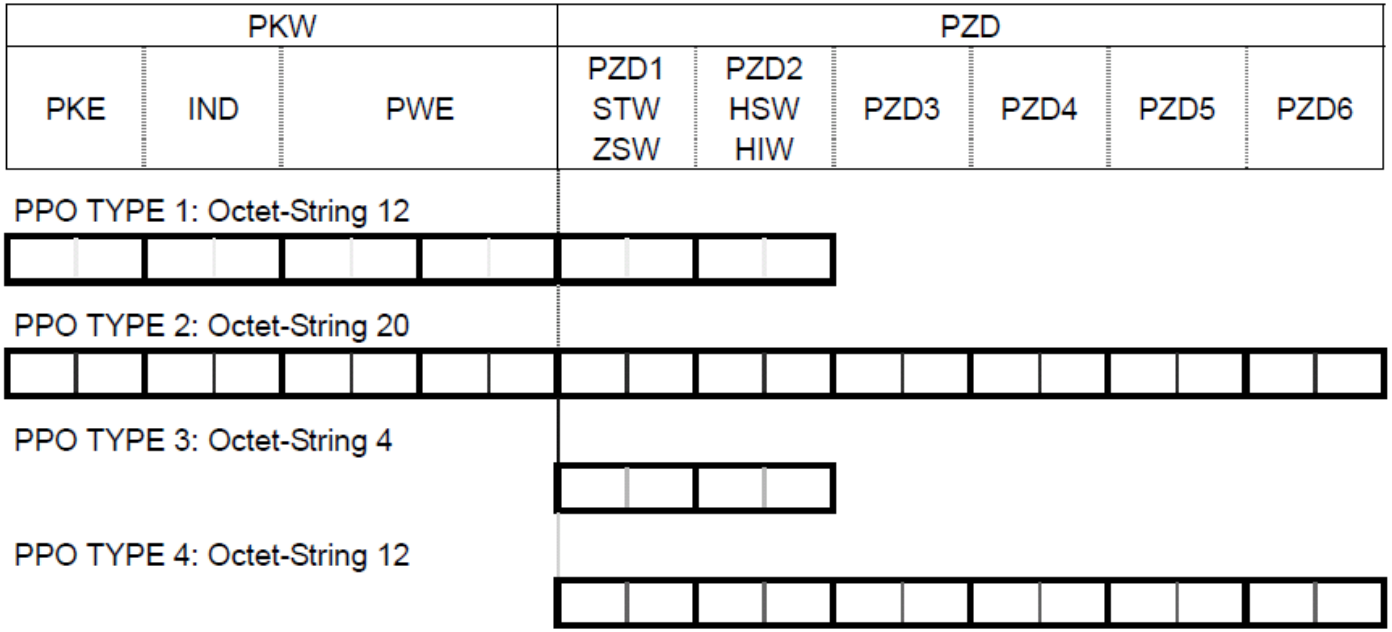
* When the parameters are changed, the power must be cycled to the VF-AS1/PS1 for the changes to take effect.

** The baud rate of the PDP002Z is automatically set by configuration a baud rate for the master.

Inverter Parameter Settings

F831-F835 setup value	F841-F845 setup value
0: No action	0: No action
1: FA06 (ALCAN2 command 1)	1: FD01 (Inverter status 1)
2: FA23 (ALCAN2 command 2)	2: FD00 (Output frequency, 0.01Hz)
3: FA07 (ALCAN2 frequency command, 0.01Hz)	3: FD03 (Output current, 0.01%)
4: FA33 (Torque command, 0.01%)	4: FD05 (Output voltage, 0.01%)
5: FA50 (Terminal output)	5: FC91 (Inverter alarm)
6: FA51 (Analog output (FM) data from comm.)	6: FD22 (PID feedback value, 0.01Hz)
7: FA52 (Analog output (AM) data from comm.)	7: FD06 (Input terminal status)
8: F601 (Stall prevention level, %)	8: FD07 (Output terminal status)
9: F441 (Power running torque limit 1 level, 0.01%)	9: FE36 (VI/II input)
10: F443 (Regenerative braking torque limit 1 level, 0.01%)	10: FE35 (RR/S4 input)
11: F460 (Speed loop proportional gain)	11: FE37 (RX input)
12: F461 (Speed loop stabilization coefficient)	12: FD04 (Input voltage (DC detection), 0.01%)
	13: FD16 (Speed feedback (real-time value)
	14: FD18 (Torque, 0.01%)
	15: FE60 (My monitor)
	16: FE61 (My monitor)
	17: FE62 (My monitor)
	18: FE63 (My monitor)
	19: F880 (Free notes)
	20: FD29 (Input power, 0.01kW)
	21: FD30 (Output power, 0.01kW)
	22: FE14 (Cumulative operation time, 1 hour)
	23: FE40 (FM terminal output monitor)
	24: FE41 (AM terminal output monitor)

PRO TYPE



PKW : Parameter ID/value
PZD : Process Data, cyclically transferred

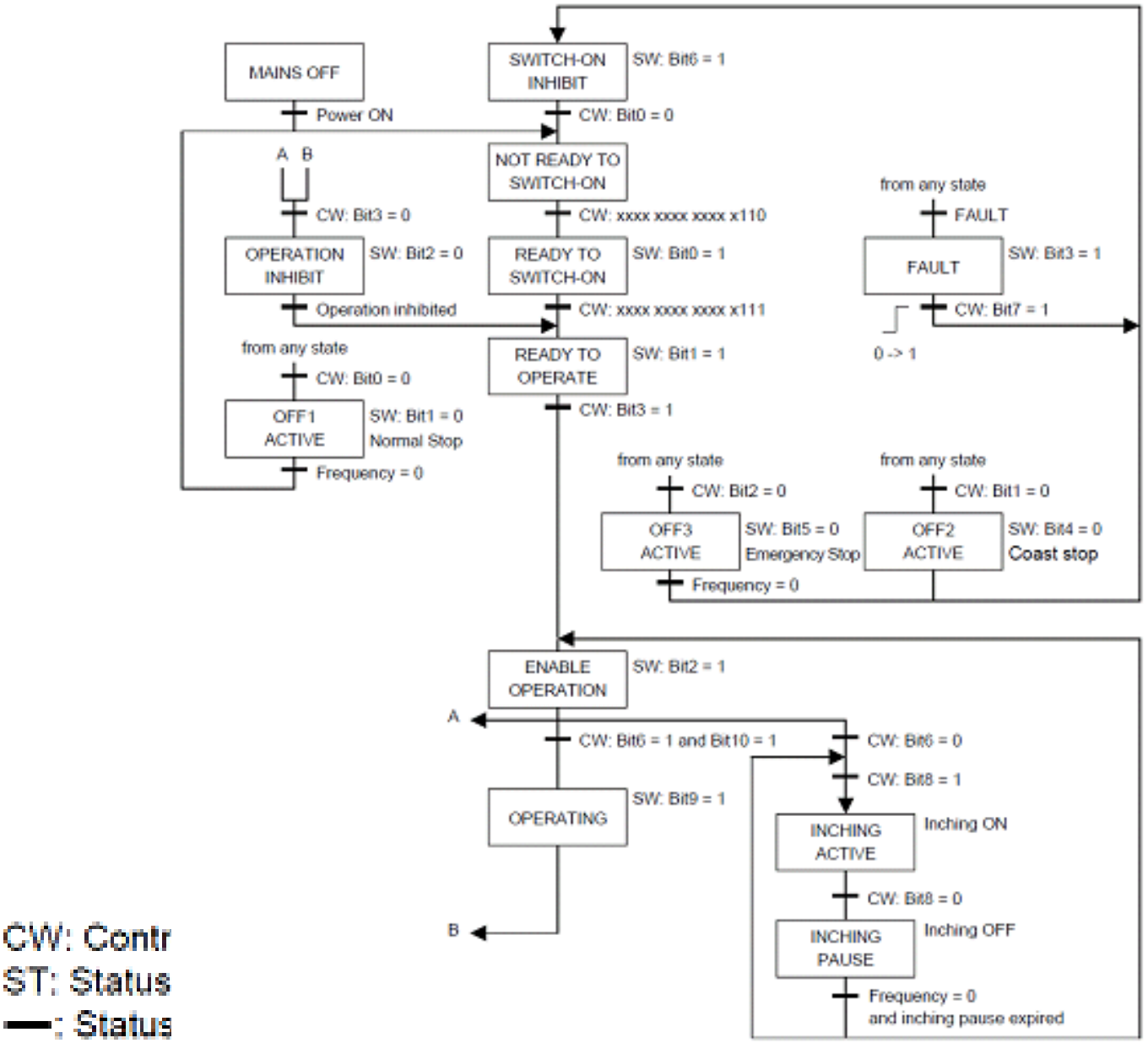
PKE : Parameter ID (1st and 2nd octet)
IND : Sub-index (3rd octet), 4th octet is reserved
PWE : Parameter value (5th until 8th octet)

STW : Control word
HSW : Main setpoint

ZSW : Status word
HIW : Main actual value

For accessing inverter's parameter, please select PROTYPE 1 or 2. PZD3 to 6, it depends on master.

State machine



CW: Contr
ST: Status
—: Status

State machine

Please refer details of following commands in the function manual.

STW Control Word Data

ZSW Status Word Data

Example of STW and ZSW in PROFIdrive profile

HSW---the frequency reference
HIW---shows a output frequency while running

CW(Control Word)				**ST(Status Word)**
0x0406	0000 0100 0000 0110	Not ready	➔ 0x0231	0000 0010 0011 0001
0x0407	0000 0100 0000 0111	Ready	➔ 0x0233	0000 0010 0011 0011
0x044F	0000 0100 0100 1111	Operate	➔ 0x1E37	0001 1110 0011 0111
0x044B	0000 0100 0000 1011	Emergency	➔ 0x0250	0000 0010 0101 0000
0x0406	0000 0100 0000 0110	Not ready	➔ 0x0231	0000 0010 0011 0001
0x0407	0000 0100 0000 0111	Ready	➔ 0x0233	0000 0010 0011 0011
0x044F	0000 0100 0100 1111	Operate	➔ 0x1E37	0001 1110 0011 0111

Difference between each version of PDP002Z

V100: First released version
V101: Certificated by 'Profibus International' in 2007

Improvement items

1. OFF3(Emergency stop)
   In V100, the reset of OFF3 is necessary to turn off the power.
2. Station address
   In V100, '0' and '126' of the station address are disabled with 'E-23'.
3. Parameter command length
   Specifications: the Maximum length is 9 bytes.
   In V100, it is enabled to receive over 10 bytes.
   In V101, the parameter fault is caused by over 10 bytes.
   Response of the parameter fault: 42 05
4. Version:

Version	V100	V101
Internal version	1601	1602(fe66 or fe67)

5. Version-up schedule: Releasing until end of Feb.2008

End